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ABSTRACT

The Casco Bay Partnership includes the University of Southern Maine (USM) and seven businesses in greater Portland, Maine, that range from large multinational corporations to small, family-owned businesses. During a 3-year project funded by a National Workplace Literacy Program grant, the partnership designed and delivered workplace basic skills instruction to 2,399 frontline workers and their immediate supervisors at the 7 businesses. All instructional programs were developed with input and direction from representative employee teams. Worker participation in the courses was voluntary, and participants received company-paid financial incentives for successful course completions. The course offerings, which varied from site to site, were customized to workers' needs and used an adult learning model as the basis for instruction. Skill areas covered in the courses included literacy and reading/writing, English for speakers of other languages, interpersonal communication, mathematics, and computers as learning tools. The onsite programs were credited with boosting employees' skills, self-esteem, confidence, job/career advancement, and rates of enrollment in continuing education and/or technical training. Thanks to their association with USM, participating businesses developed a more productive work force and a better understanding of how adult learning models can be integrated into company operations. (Twenty-eight project products/documents are listed.) (MN)

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ED 426 249

Casco Bay Partnership for Workplace Education

Final Performance Report

National Workplace Literacy Program #V198A40203

three year project: November 1994 - December 1997

submitted to the U.S. Department of Education
March 1998

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Executive Summary

During the three-year grant period of the National Workplace Literacy Program, the Casco Bay Partnership (University of Southern Maine) designed and delivered workplace basic skills instruction to 2399 frontline workers and their immediate supervisors at seven business sites in greater Portland, Maine. Success of the project is evidenced by career and educational advancement of individual participants, and continuation of the workplace education program at five of the original Partnership sites and additional (new) businesses continuing to join the Partnership program.

On-site basic educational programs were developed with input and direction from representative employee teams; program guidelines included *broad representation of stakeholders in program management, voluntary worker participation in courses, confidentiality of individual student scores, company-paid financial incentives for successful course completions.*

Course offerings varied from site to site, and were customized to the needs of workers using an adult learning model as the basis for instruction. Skills areas included: literacy and reading/writing, English for Speakers of Other Languages, interpersonal communication, math, and using the computer as a learning tool. Outcomes for individual participants included gains in skills, self-esteem and confidence, job/career advancement, access/entry to continuing education or technical training. Companies participating in the Partnership benefitted from the association with the university, the increased productivity, morale and readiness-for-change of the workforce, and an increased understanding of how adult learning models can be integrated into company operations in support of the corporate mission and organizational change process.

Key Results and recommendations from this project are presented on the following page in summary form.

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Executive Summary: Results and Recommendations

- The seven business partners were varied in size, product, type of organization, and employee base.
- The university as partner was viewed as advantageous.
- During the three-year project period, the Casco Bay Partnership served 2,399 employee participants.
- The total number of unduplicated individuals who participated in workplace literacy courses was 1,024. The average number of courses completed for each participant was 2.4, and 29% of CBP participants took three or more courses.
- The rate of successful courses completion was 74%.
- Three factors which contributed to high rates of participation and completion were 1) convenience of scheduling and location, including partial release time to attend class, 2) direct and explicit relationship of the educational program to company initiatives and business objectives, 3) visible and tangible rewards for educational development, both to individual learners and to the business organization as a whole.
- Average number of hours in class (contact time) was 36 hours per enrollment, with program participants averaging 84 hours of course time in the program.
- A total of 397 courses were delivered, with an average of six students per class.
- Overall, students in the program demonstrated a 20% gain in skills during each 40-hour cycle of instruction, based on the use of standardized pre- and post testing.
- Outcomes for Partnership companies included: successful in-house promotions, reduced turnover, increased job levels and pay, business initiatives utilizing the education program to accomplish corporate goals, and union membership applying new skills to accomplish contract negotiations.
- The importance of 'shared mindset' between education and business partners and program linkage to company mission are a key recommendation of this project.
- Lifelong learning practices among workers, and sustained language and literacy development required sustained access to educational programs.
- The project produced two publications, 17 curriculum units and 9 related documents, and presented at numerous local, regional and national conferences.
- The project used a customized database to track statistical information. It is a recommendation that such a database be included as a mainstay of program operations, for efficiency and accuracy of record-keeping.
- The project retained an external evaluator to review and report on program activities. It is a recommendation that an evaluation specialist be considered an essential and core member of the project team, from design through operations.
- The Casco Bay Partnership has made significant gains to institutionalize the program.
- Five of the seven Partnership sites are continuing workplace education programs, with assistance from a state training fund.
- The contributions of the program have had a positive impact on the business and education community of southern Maine.

The Casco Bay Partnership for Workplace Education was created in May 1993, as an eighteen-month National Workplace Literacy demonstration project funded by the U.S. Department of Education. The project is housed in the College of Education and Human Development at the University of Southern Maine. The Partnership received a second NWLP grant in 1994, to provide workplace literacy programming for workers at seven corporate sites in Southern Maine. This report describes the activities and accomplishments of the Casco Bay Partnership during the three-year grant period from November 1994 through December 1997.

Information in this report is organized as follows:

Part One -- Profile of the Partnership: description of the business sites and university provider *(pages 4-10)*

Part Two -- Objectives and Accomplishments of the project: who was served, course offerings, completions, impacts and results *(pages 11-22)*

Part Three -- Products, Database, Dissemination Activities and Evaluation *(pages 23-29)*

Part Four — Future of the Casco Bay Partnership *(pages 29-30)*

Key findings and recommendations are included at the end of each section in bulleted form, and are listed in the executive summary.

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Part One: Profile of the Partnership

Seven companies participated in the workplace literacy grant. The businesses represented a spectrum of industry types, ranging from large multi-national corporations to small, family-owned businesses. Two companies had unionized workers; five did not. Beyond the variations in product/service, size and employee demographics, each of the seven workplaces also had a pronounced organizational culture that proved to be a significant factor influencing the implementation and maintenance of a workplace education program at the site. Each of the Partnership companies is briefly described below.

WOODS STRUCTURES INC.

Wood Structures Inc., a manufacturer of wood and steel trusses for use in construction of new homes and buildings, has two locations: the manufacturing facility in the Saco Industrial Park and corporate offices in Biddeford, Maine. While the entire company employs approximately 120, workplace education classes are generally aimed at the 65 employees working at the production facility. Two shifts run from 7 AM - 3 PM and from 3 PM - 11 PM, Monday through Friday. During peak production, typically June - November, first shift begins at 5 AM rather than 7 AM, and second shift runs until 1 AM, rather than 11 PM. Saturday overtime is also common. The work consists of cutting lumber with computerized saws, assembling individual pieces to form a truss on a large table, and hammering plates into all joints. Tape measures and hammers are used by every employee; Pneumatic and hydraulic clamps, roller presses, and stacking systems are operated by most.

The workforce is 95% male in Saco, about 80% male in Biddeford. All employees are white, except one Hispanic. Workers have been employed by Wood Structures Inc. an average of 8.8 years, average length of employment of employees at the Saco manufacturing facility is estimated at 6.5 years. Wood Structures employs about 5 - 15 temporary workers during peak production; usually 3 -8 remain as permanent workers at the end of the summer.

Employees who take workplace education classes are compensated $150 for successful completion of a 40-hour course.

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NATIONAL SEMICONDUCTOR

National Semiconductor employs approximately 1400 people at the South Portland subsidiary "Fairchild Semiconductor". Almost 1000 of these employees are engaged in production-related jobs, working 12 hour shifts, 4 days per week. High-tech production work involves the operation of equipment used in the manufacture of integrated circuits.

The manufacturing employee base is approximately 60% female, 10% ethnic minorities (predominantly Asian), ranging in age from 20 to 60 years, and averaging 10 years of employment.

The Casco Bay Partnership for Workplace Education has based its work on a competency model developed for the Class 100 production area known as CPP Plasma Etch. The competencies identified have been used as the targets of the "Learning Labs" which have been offered on site at National, encompassing communication and computer-as-a-learning-tool curriculum.

BARBER FOODS

Barber Foods, a manufacturer of frozen chicken entrees, employs approximately 740 associates. There are 3 shifts: 1st (6:45 a.m. - 3:15 p.m.) and 2nd (3:45 p.m. - 11:15 p.m.) are production shifts, 3rd (11:30 p.m. - 6:45 a.m.) is a maintenance only shift. Associates typically work 5 days. The plant runs 6 days a week. All associates have Sunday off in addition to one other day in the week. Half of the associates work on the production line processing frozen chicken entrees. The work is performed in climate controlled conditions of approximately 40 F in typical assembly line fashion. Associates add stuffing and form the chicken as it passes in front of them on a conveyor line. Other production jobs include bagging or packing the entrees into boxes, and labeling boxes. The other half of Barber Foods' associates perform quality control (Weight Checker), technical support (Machine Set-up, Machine Maintenance) supervisory duties on the production floor, or managerial positions.

HANNAFORD BROS. CO.

Hannaford Bros. Co. is the parent company of a large, east coast supermarket chain comprised of approximately 130 retail outlets known by different names including Shop 'N Save and Wilsons.

The South Portland Distribution Center is the main warehousing operation for the northeast, with approximately 400 employees. This number includes the warehousemen, support/office staff, Dallas (Inventory control staff) and the transportation department (Hannaford Trucking Co.)
Warehousemen operate on two main shifts: 5 am - 4 pm, and 2 pm - 3:30 am.
Shifts vary from 4 ten-hour days to 5 eight-hour days. Warehousing is a seven-day operation which is busiest during the weekend.
The primary jobs at the warehouse include:

-selecting and loading of freight for retail grocery onto trucks

-building the loads into store-ready shipments on pallets with shrink wrap

Equipment used includes single and double jacks, standup Raymond or Crown forklifts, 45-foot refrigerated trailers, tractor trucks, automated dockplates, computer for inventory control of goods.

The workforce is 95% male and 5% female (mainly in office support positions).
The average age of workers is 32-35. Most have been employed between 12 -15 years. Ethnicity includes Franco-American, Anglo, Italian, Irish and Asian, representing less than 10% of the employee base in total. There is also a growing number of contract labor workers, in addition to unionized regular employees.

AMERICAN TOOL

American Tool Companies is the parent company of the local Gorham division that is a partner of the Casco Bay Partnership for Workplace Education. American Tool is an international company employing thousands of people and manufacturing various kinds of tools out of metal. The local division employs about 189 people on three shifts manufacturing router bits, screw extractors, dies, and other tools. Some of the employees operate machines that cut the long rods

of steel and shape them into the various tools. Other employees finish the tools by removing the burrs, heat treating them, polishing them, and etching them with the size and brand name. Another department packages the tools in brand name packages to be sent to the warehouse before being distributed around the world.

The three shifts at the American Tool plant in Gorham begin at 7:00 a.m., 3:30 p.m., and 11:00 p.m. The employees typically work Monday through Friday, with some occasional overtime during the week and on Saturdays. If there is a high demand for their products the workers will work up to seven days a week.

The following information only applies to the employees at the local division and was correct as of September of 1996. The average age of the employees is 39 years old, with 65% of the employees being men and 35% women. The majority of the workforce, 72%, is white and the next largest ethnic group represented is Asian, with 25% of the workforce. The remaining 3% is evenly divided between Blacks, Hispanics and Native American Indians, each with 1%.
Six percent of the workforce are veterans of the Vietnam war, and 1% are disabled veterans. Three percent of the workforce are disabled. The average length of employment is approximately five years.

NICHOLS PORTLAND

A Division of Parker Hannifin (an international company). Nichols Portland designs and builds gerotors for use as pumping and motor elements in applications ranging from automotive oil pumps to high pressure hydraulic motors. Nichols Portland is an around-the-clock manufacturer, employing 411 people. Several schedules are in place, with two of the three product lines working three shifts. The third product line is on a twelve hour shift schedule, with employees working either 5:30 a.m. to 6:00 p.m. or 5:50 p.m. to 6:00 a.m. The production workers assigned to those product lines on a three shift schedule usually work Monday through Friday. Those assigned to twelve hour shifts work Sunday, Monday and Tuesday, or Wednesday, Thursday and Friday with Saturday being optional for both groups. Some twelve hour shift employees work an

alternating schedule which has them working each of the days of the week in any two week period. Office workers typically work Monday through Friday from 8:00 a.m. to 4:30 p.m. Primary production jobs include machine operator and assembly positions. The type of machinery used includes powdered metal presses, furnaces, and grinders.

The ethnic composition of the workers includes one Hispanic, four black, and eight Asian/Pacific Islander workers. Approximately 15% of the employees are women. The average age of a Nichols employee is 39 years. The average length of their tenure with Nichols is ten years.

KONICA

Konica Quality Photofinishing is the premier photofinishing plant in northern New England. During peak season approximately 45 thousand rolls of film are processed each night at the facility. Konica employs approximately 200 employees who work afternoon and night shifts. Instead of discrete shifts, employees report in waves. The first wave begins at 3 p.m. and the subsequent waves arrive each hour thereafter, until midnight. Employees work five days per week during low production times and six days per week during high production times. The hours employees work are also dependent upon production: during peak times, their shifts often run 10 to 12 hours in length. Employees are involved in sorting, developing, cutting, packaging, and shipping rolls of film. The work is routine and uses machines that require little input from the operator.

The typical Konica employee is a white woman; average age is 30. There is a small Asian population (approx. 10 percent of the workforce). Employee turnover is high at Konica (over 300% in 1995.) Little incentive is given to employees to take classes. The classes are held entirely off-shift and workers are paid for one hour of their class attendance time (50%.)

ADDITIONAL SITES

As the Partnership evolved, several other businesses in Southern Maine heard about the

workplace education project and requested assistance setting up small basic skills programs at their sites. These included Hutchins Trucking, a local freight carrier for supermarkets and other wholesale businesses, and the department of environmental services at the regional hospital, Maine Medical Center.

UNIVERSITY OF SOUTHERN MAINE

The University partner in the Casco Bay Partnership is the administrative authority and educational provider and coordinator of grant activities. Housed in the College of Education and Human Development, four full-time project staff, eight part-time staff, faculty members from the graduate programs in adult education and literacy, and the dean of the College made up the core Partnership team. Developing a National Workplace Literacy Project in a university setting (versus an adult ed, community ed, or community college program) contributed to several defining characteristics of the Casco Bay Partnership:

- emphasis on an adult learning model and teaching practices developed in the College's graduate programs. This pedagogical foundation provided consistency of operations across the variations of the Partnership sites and helped staff to develop workplace education competencies in diverse organizational settings;
- productive interaction with graduate students in adult education and literacy programs; providing research and teaching opportunities for students and faculty in non-traditional adult education environments (workplace);
- fulfilling an outreach, workforce development and community/business partnership function of the university mission (in a state with no community college system);
- providing direct linkage to higher education, training and development and organizational development resources of the university for both individual participants and businesses.

PART ONE -- SUMMARY:

- The seven business partners were varied in size, product, type of organization, and employee base; this diversity did not appear to have a negative impact on the effectiveness of the workplace education program. Rather, the diversity was seen as a source of strength in affirming the Partnership mission to promote lifelong learning in workplaces and developed staff capacity to do so under varying organizational conditions.
- The university as partner was viewed as advantageous; perceived benefits included the quality of instruction from graduate programs and university community outreach mission, as well as the link to higher education for participants and business partners.

Part Two: Objectives and Accomplishments of the Project

As stated in the grant proposal it was a goal of the project to provide learner-centered literacy instruction in the workplace for approximately 900 employees per year (700 in year three due to budget rescissions), in order to foster new employment opportunities, career advancement, and increased productivity in a changing workplace environment.

Participation:

During the three-year project period, the Casco Bay Partnership served 2,399 employee participants. The following tables indicate worker participation across instructional cycles (12 week sessions) for the entire Partnership, and by company. Demographic data for participants is presented in table 3.

Table 1: Enrollment by Cycle and Year

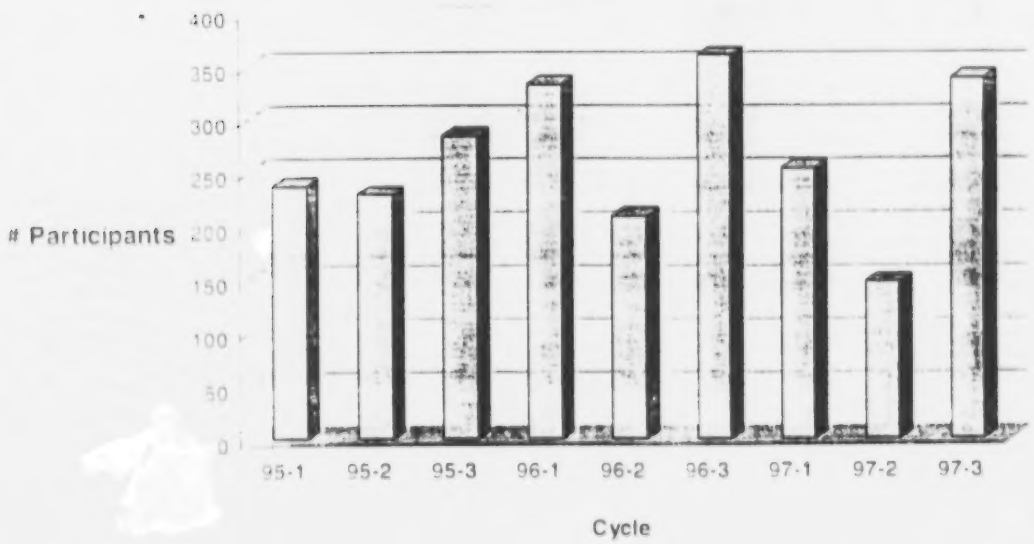

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Table 2: Enrollment by Company and Cycle

	95-1	95-2	95-3	1995	96-1	96-2	96-3	1996	97-1	97-2	97-3	1997	Total
American Tool	50	34	53	**137**	31	48	80	**159**	62	35	81	**178**	**474**
Barber Foods	132	134	140	**406**	152	91	120	**363**	88	83	142	**313**	**1082**
Hannaford Brothers	32	10	43	**85**	64	39	23	**126**	19	17		**36**	**247**
Hutchins Trucking	13			**13**							13	**13**	**26**
Konica					5	3	18	**26**	8			**8**	**34**
Maine Medical Center											12	**12**	**12**
Nichols Portland		44	31	**75**	54		49	**103**	33	1	54	**88**	**266**
Fairchild					16	29	71	**116**	29	12	21	**62**	**178**
Wood Structures	11	8	18	**37**	12			**12**	[illegible]		16	**31**	**80**
Project Totals	238	230	285	**753**	334	210	361	**905**	254	148	339	**741**	**2399**

Table 3: Ethnic Distribution of Participants by Company

	Total	Male	Female	White	Black	Hisp.	Asian	Native Amer.	LEP	Avg. Yrs @
ATC	116	65	51	69	2	3	40	2	37	5
BF	395	219	176	187	64	28	116		240	3
HBC	124	116	8	121			2	1		11
HT	13	10	3	13						12
KQP	25	5	20	21			4		3	9
MMC	12	3	9	6		1	5		9	8
NP	158	124	34	152			6		4	8
NES	138	34	104	133			5		2	12
WS	43	39	4	42		1				9
Project	**1024**	**615**	**409**	**744**	**66**	**33**	**178**	**3**	**295**	**6**

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Retention:

The total number of unduplicated individuals who participated in workplace literacy courses was 1024. The average number of courses completed for each participant was 2.4. Further, 296 students, or 29% of CBP participants, took three or more courses, significantly more than the NWLP reported average across projects of 10%. Which students took the most courses, and why? As the following table shows, students in literacy and English Second Language courses were the most likely to enroll in multiple courses over time.

Table 4: Distribution of Multiple Enrollments

	GED/Career	Communication	ESL	Literacy	Math
Average # of classes taken by students in this strand	1.20	1.24	2.86	1.4	1.3

This data indicates a pattern that is consistent with the developmental nature of language and literacy instruction. An individual who enrolled in a basic ESL literacy course at the program's outset in 1993 may well still be participating in an ESL intermediate or advanced class in 1997. **This pattern of long-term skills development and the corresponding commitment of adult learners to remain in an educational program for several years is instructive. Implications for what are typically short-term and quick-fix company training programs are clear; these are not a substitute for continuous adult learning opportunities. Lifelong learning practices among workers, and sustained language and literacy development require sustained access to educational programs.**

Workers who enrolled in communication, GED overview and math courses had the lowest rate of multiple courses. This data is also consistent with expectations of instructors and students who often considered these classes as "refresher" topics, to prepare workers for company training in statistical process control, team training and the like, or to enter a GED preparation course at a community adult education center.

Completion Rate:

Enrollment was operationally defined as attending at least two class sessions (the first week of a course.) At the end of the first week, all attending participants were entered into the project database as enrolled in the class. Waiting until the end of the first week helped to assure student placement was appropriate for the assigned class, and any necessary scheduling changes could be made to accommodate workshift or production timetables.

Criteria for successful completion of a course included approximately 90% attendance (each company program advisory team set attendance policy for the site), demonstration of competence in the subject area and readiness to advance to the next level. **The rate of successful course completion across all courses and sites for the project was 74%**, comparing favorably to the reported NWLP data of 48%.

Three factors contributed to high rates of both participation and course completion in the Casco Bay Partnership:

1. **convenience of scheduling and location, including partial release time from work to attend class:**

Those Partnership sites that released workers from work to attend class had a higher rate of completion than those that maintained class schedules entirely off shift time. Typically, two-hour workplace education courses were arranged at shift overlap time; workers attended one-hour "on company time" and one hour of their "own time."

2. **direct and explicit relationship of the educational program to company initiatives and business objectives:**

An essential factor in the Partnership's success was the degree to which the workplace education program became enmeshed in the culture, policies and work routines of the host company. Examples of this in the Casco Bay Partnership included American Tool Company's "pay-for-skills" program that rewards employees for gains in job-related knowledge, workplace education

courses meeting certification requirements for operators to upgrade their rank (and pay) at Fairchild Semiconductor, and a direct relationship between workplace education curriculum at Barber Foods and content matter on company eligibility tests for promotion.

The perceived value of workplace education to the site advisory team, managers, trainers and front-line workers correlated with the program's level of integration with company business priorities and support for worker development. To succeed, it was essential that the educational program was not viewed as peripheral or marginal to the organization's core mission. Making the workplace education program an important part of "how business is done" requires the highest level of support and advocacy. While there are many ways for top managers and executives to provide vocal and visible support for workplace education, leading by example may be the strongest evidence of "championing" a program. At Barber Foods, CEO and founder Gus Barber (himself a second-generation immigrant) enrolled in a workplace course to improve his own skills as well as to support and encourage company lineworkers in their educational growth.

3. **visible and tangible rewards for educational development, both to individual learners and to the business organization as a whole.**

Participants in the program sought out and enrolled in workplace basic education courses in order to accomplish very tangible goals. Often these related to job needs, pressures or anticipated changes in the work routine. Participant motivations also encompassed a wide range of personal objectives, from career advancement (moving up or out of the current job position, pay raise), self-esteem and confidence needs ("I want to see if I can still learn"), to family or educational goals such as attainment of a GED or providing children with help and a positive role model for school activities. In the larger domain, businesses get involved in workplace education partnerships in order to meet a need for workforce development, to supplement/enhance training activities, and to establish themselves as organizations capable of high performance work systems.

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Contact Hours:

Instructional programs ranged in length from 8-12 weeks, with four hours of class time per week. While some shorter-length workshops were offered, the vast majority of courses spanned several months. **Average number of hours in class (contact time) was 36 hours per enrollment, with program participants averaging 84 hours of course time in the program. This is significantly higher than the reported average of National Workplace Literacy Projects (30 hours per participant, and 50% of participants receiving only 16 hours.) For all participants served in the Casco Bay Partnership, the total number of contact hours delivered was 86,000.**

One of the distinguishing features of Casco Bay Partnership programs is the core reliance on an adult learning model. Unlike traditional training interventions, the workplace education courses emphasized learner responsibility (self-directed learning) and the development of mid- to long-term educational planning. Courses were designed for maximum educational benefit, to allow participants enough time and practice to learn, apply, reflect upon and augment new skills. The effectiveness of this type of instruction is well-documented in adult education, and is also supported by the NWLP finding of increased likelihood of longer-term participants obtaining career/job advancement.

Courses:

The types of instruction offered by the program included four general areas: reading and writing, ESL, general math, and communication with additional workshops for GED preparation and career planning. Table 5 shows the number of courses offered in each curricular area at each company, for the three-year grant period. **A total of 397 courses were delivered, with an average number of six students per class.**

Table 5: Courses Offered by Company and Strand

	GED/Career	Communication	ESL	Literacy	Math	Company Total
American Tool	4	8	33	14	20	79
Barber Foods	4	14	86	16	45	165
Hannaford Bros.	9	8		15	21	53
Hutchins Trucking		2				2
Konica Photo		3	1	2	2	8
Maine Medical			1	1		2
Nichols Portland	4	8	2	8	24	46
National/Fairchild		9	1	1	13	24
Wood Structures	3	5		2	8	18
TOTALS	**24**	**57**	**124**	**59**	**133**	**397**

Within these curricular "strands" the Casco Bay Partnership delivered a diverse range of company-tailored programs. For example, within the reading and writing strand, courses included literacy at a range of ability levels (with one-to-one tutoring as well as with groups of 4-10 students.) English for Speakers of Other Languages also included courses at a range of levels, with specialized workshops in pronunciation or company-specific needs (Getting Ready for ISO 9000, math and reading for set-up operations, general math of various types to prepare workers for specific workplace applications such as the introduction of computer-controlled equipment, or preparation for company-provided SPC or gauge training at Nichols Portland.

As the project evolved, courses within the curricular areas became more centered on work themes or problems rather than skills. For example, several 'hybrid' courses emerged as a result of company/worker needs: ESL math (basic math for non-native speakers of English, with emphasis on vocabulary and metric/standard conversions), workplace science (math, problem-solving and basic science as it applies to production operations), and basic communication courses that focussed on specific work/team needs, such as "improving the dispatch process." And finally, it was an objective of the project to insert computer technology, wherever appropriate and feasible, in most classes. Recognizing the pervasive and rapid introduction of

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computers and computer-controlled equipment into all phases of work operations (across all sites), the workplace education courses performed many of the instructional activities using company-relevant computer technology. Literacy students learned how to access company e-mail systems and the Internet; math students practiced with computer applications. ESL students created original writings and projects using wordprocessing systems, etcetera.

Outcomes: Impacts and Results

Program activities benefitted individuals, the employing organizations, and the university-based educational staff who coordinated and instructed in the program. Much of the focus of the National Workplace Literacy program design was on the job-related gains evidenced by individual workers, and their impact on company "bottom line" metrics of productivity, safety, retention, promotion, and the like. The Casco Bay Partnership did in fact address this priority in its workplace program design, implementation and evaluation. However, the full scope of 'what was learned' and 'who benefitted' went beyond the NWLP rubrics in many ways. Discussion of this topic may be found in the Casco Bay Partnership's final evaluation document, "The Voices of Learners at Work" by Dr. Miriam Clasby, Clasby Associates (1997.)

Skills gains for individual participants were documented using a variety of assessment tools and procedures. Pre- and post-tests were conducted for ESL students (using nationally standardized instruments such as the BEST or CASAS); Partnership staff developed customized tests for math classes (that included workplace examples) and used writing samples for ESL and literacy students for pre- and post comparison. Across the Partnership, in those classes using standardized pre- and post- assessment tools, the skills gains were documented as follows:

Table 6: Pre- and Post Assessment

	Standardized	CASAS	Writing Assessment
Career	4.0%		
Communications	9.0%		
English	21.7%		8.2%
ESL	5.8%	5.51*	
Mathematics	23.0%		
Project	19.9%		

CASAS score improvement for 2 courses (approx. 100 hrs. instruction), slightly above the national average reported by CASAS at 5.0 points.

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Overall, students in the program demonstrated a 20% gain in skills during each 40-hour cycle of instruction, based on the use of standardized pre- and post testing.

Additionally, program participants completed self-reported skills inventories ('I Can...') at the beginning and end of each course. These assessments included both common items for all class members (e.g., 'I can estimate the number of boxes on a pallet') as well as individual learning goals (e.g., 'I can converse more easily with my supervisor' or, 'I can help my son with his math homework.') The skills and competencies described in the 'I Can...' inventories were customized to each class and each learner's individual learning goals. Across the Partnership, gains in self-reported abilities that were directly related to instructional activities showed the following improvements:

Table 7: 'I CAN...' Results by Strand (Pre - Post)

Curricular Area	Pre - Post Scoring Shift
GED/Career	37.5%
Computer Learning	39.9%
Communication	34.7%
English as a Second Language	27.2%
Literacy	34.5%
Basic Math	34.5%

Self-reported skills gains in computer-as-a-learning-tool and GED/Career planning were highest (37-40% gains), with improvements in ESL somewhat lower (27%.)

On the job, participants identified a broad and diverse range of skills applications --led first and strongly by an increase in self-confidence (88% of participants.) Course evaluations also asked participants to comment on the quality of instruction, and their own role in "taking charge of their learning." 80-87% of participants reported significant achievement in the areas of effort, reflection on learning and progress, respect for others, relevance of instruction to work, and taking responsibility as a self-directed learner. See the final evaluation report for a complete

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analysis of the course evaluation data (Clasby, 1

For the participating companies, some of the outcomes realized by the program include:

- **Fully 50% of current Barber Foods supervisors are graduates of the 'WorkSmart' program.** Promoting from within was a primary reason for the company to initiate the workplace literacy program in 1993, and the company is now able to tap into the existing workforce for its supervisory positions. For a continually expanding business, in a tight labor market, this success represents a considerable competitive advantage for Barber Foods.
- **Turnover at Barber Foods has had an overall decline since the program's inception** in 1993, decreasing from an annual rate of 23% in 1993 to 19% in 1997. This reduction in turnover took place at the same time that the company expanded from fewer than 400 workers (1993) to nearly 730 in 1997.
- **40% of all in-house promotions and pay-for-skills advancement went to workplace education participants at American Tool Company**. One result of this for the program was that the level of participation in workplace education courses remained very high (approximately 30% of the company was enrolled in class every cycle, and 65% of all American Tool employees have taken at least one course.)
- **Business initiatives** (such as an ISO 9000 review at American Tool, and introduction of an operator certification process at Fairchild Semiconductor) **utilized the workplace education program as a strategic tool for accomplishing corporate goals**. By including workplace basic courses in the same groupings as required technical training for job upgrades, Fairchild increased the effectiveness of their overall training-for-certification process, encouraged more operators to undertake/obtain certification, and contributed to a "learning culture" environment in the high-tech fabrication unit. Likewise, American Tool tapped the resources of the workplace literacy program to design and deliver basic skills ISO 9000 readiness modules, provided as preview and review sessions around the company ISO 9000 training sessions. Employees with limited English proficiency, literacy or math skills attended these "before and after" modules to prepare for and review/reinforce the content information of the company-wide ISO

presentations.

- **Union members applied workplace education skills to their roles and responsibilities as shop stewards and contract negotiators**. At Hannaford Bros. Co., several union leaders reported that the effective communication courses offered through the workplace education program had enhanced their abilities to conduct meaningful and effective labor/management dialogue during union contract negotiations.

Much has been said in the literature and research on workplace education about the importance of the workplace context, and the need to view skills development in light of the social environment in which basic skills instruction is delivered and applied. (see G. Hull, ed. Changing Work, Changing Workers. SUNY, 1977.) For the Casco Bay Partnership, the workplace culture and organizational policies pertaining to worker training and development made all the difference between a successful and longstanding Partnership program and a program that was unable to "get off the ground," despite early endorsement by management. This was clearly the case at Konica Quality Photo, where a lack of incentive to workers to participate in the program, a lack of support from supervisors, an advisory group that was disbanded after only a few meetings, and no apparent linkage between company goals and a basic skills program effectively disabled the program from establishing itself in any coherent way. **The importance of 'shared mindset' between educational providers and business partners and program linkage to company mission are a key recommendation of this project**. This topic is treated more fully in the Casco Bay Partnership's final evaluation report (Clasby, 1997.)

While the educational partner is not usually described as a beneficiary in workplace literacy partnerships, there were clear and tangible benefits to the Casco Bay Partnership educational staff and the university graduate programs. These included such outcomes as:

- increased regional capacity for workforce development; development of staff expertise in the design and delivery of basic skills education for incumbent workers;
- enhancement of existing graduate programs in adult education and ability to produce workplace-generated curriculum for non-traditional adult students;
- community and regional recognition as a resource for workplace education program design, advising, and provider of workshops, seminars and institutes on the topic.

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PART TWO -- SUMMARY:

- During the three-year project period, the Casco Bay Partnership served 2,399 employee participants.
- The total number of unduplicated individuals who participated in workplace literacy courses was 1,024. The average number of courses completed for each participant was 2.4, and 29% of CBP participants took three or more courses.
- The rate of successful courses completion was 74%.
- Three factors which contributed to high rates of participation and completion were 1) convenience of scheduling and location, including partial release time to attend class, 2) direct and explicit relationship of the educational program to company initiatives and business objectives, 3) visible and tangible rewards for educational development, both to individual learners and to the business organization as a whole.
- Average number of hours in class (contact time) was 36 hours per enrollment, with program participants averaging 84 hours of course time in the program.
- A total of 397 courses were delivered, with an average of six students per class.
- Overall, students in the program demonstrated a 20% gain in skills during each 40-hour cycle of instruction, based on the use of standardized pre- and post testing.
- Outcomes for Partnership companies included: successful in-house promotions, reduced turnover, increased job levels and pay, business initiatives utilizing the education program to accomplish corporate goals, and union membership applying new skills to accomplish contract negotiations.

Findings:

- The importance of 'shared mindset' between education and business partners and program linkage to company mission are a key recommendation of this project.
- Lifelong learning practices among workers, and sustained language and literacy development required sustained access to educational programs (in contrast to quick-fix training modules.)

Part Three: Curriculum Products, Database, Dissemination Activities, Evaluation

Curriculum and Project Publications:

As part of the demonstration grant, the Casco Bay Partnership for Workplace Education developed workplace curriculum and assessment tools, produced scholarly reports and Partnership publications. Of special note is the student-authored publication "Writers At Work" which contains original writings from adult learners from across the Partnership sites. The five issues of "Writers At Work" served as an effective classroom tool, as well as a Partnership hallmark. Mailings of this project document went out to over 5,000 recipients, and continue to draw acclaim from business and education sectors. A complete listing of Casco Bay Partnership products follows:

CURRICULUM PRODUCTS

Authentic Text: The Published Personal Narratives of Adult ESL Learners. Nancy J. Dikeman. *University of Southern Maine.* 1997

- Description: A study on the impact of publishing on the literacy and lives of ESL learners; includes interviews with learners and teachers.

Applications of Learning. Bartlett Hewey. *Casco Bay Partnership for Workplace Education.* 1996. DUE TO COMPANY PROPRIETARY REASONS, WE ARE UNABLE TO DISSEMINATE THIS PRODUCT.

- Description: Examples of computer-generated, workplace-specific documents designed and created by learners in a workplace application class.

Cross-Cultural Communication: Valuing Differences in the Workplace. Don Bouchard. *Casco Bay Partnership for Workplace Education.* 1996

- Description: Curriculum on cross-cultural awareness for mixed groups of native and non-native speakers of English.

Curriculum Guide for Computer Writing. Jane DiMillo. *Casco Bay Partnership for Workplace Education.* 1996

- Description: curriculum for new computer users and writers with appendices of student writings, and readings to motivate writing.

Empathic Communication. Andrew LeCompte. *Casco Bay Partnership for Workplace Education.* 1995

- Description: interpersonal communication curriculum based on an empathic model;

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includes facilitator's manual.

ESOL Board Game. Carol Fleishman and John Kirk. *Casco Bay Partnership for Workplace Education.* 1997

- Description: Board game for building workplace-specific knowledge including safety materials, vocabulary, interactions with staff; board layout replicates the floor layout of the manufacturing facility; For dissemination purposes: game questions available.

ESOL Listening Tapes. Carrie Austin and Joan Zavez. *Casco Bay Partnership for Workplace Education.* 1996

- Description: ESOL tapes using site-specific language to improve listening comprehension in the areas of following directions, understanding questions and conversations.

ESOL Workplace Photos and Lesson Plans. CBP ESL strand members. 1996

- Description: ESOL lesson plans based on site-specific photographs; lessons cover safety, equipment, machinery, and job procedures.

Presenting Yourself: Communication Curriculum. Sheila Hannigan. *Casco Bay Partnership for Workplace Education.* 1996

- Description: curriculum for effective communication and presentation skills for esol learners.

Research Question: How are adult ESL learners affected by having their personal stories published (in Writers at Work). Nancy J. Dikeman; Research Portfolio. *University of Southern Maine.* 1996

- Description: research project on the impact of publishing on esol learners.

Science in the Workplace. James Cumiskey. *Casco Bay Partnership for Workplace Education.* 1996

- Description: Curriculum outline with focus on basic science and engineering principles for workers fabricating metal equipment and/or tools; includes multiple activities.

Stories Make the Links For *Writers at Work*. Linda J. Evans, Bo Hewey and Chessell McGee. *Casco Bay Partnership for Workplace Education.* 1996

- Description: Paper documenting and reflecting on the process of publishing student-authored Text by three CBP staff: the editor, teacher and Photo-grapher/Teacher Aide.

Summer Site Visits '95: Workplace education class establishes innovative networking between casco bay partners. Steve McFarland and Greg Williams. *Casco Bay Partnership for Workplace Education.* 1995

- Description: overview, course outline, outcomes and summary report of summer site visit program between three (3) CBP partner companies. Workers organized and delivered worksite tours as a forum for discussing issues of quality, safety and education.

Supervision Basics: Verbal and Written Communication. Carole Starr. *Casco Bay Partnership for Workplace Education.* 1997

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- Description: communication skills curriculum used in supervising others. areas covered include listening skills. giving feedback. delegating. motivating others. meeting processes and behavior. facilitation skills. and business writing.

Team Building Curriculum. Diana McCain. *Casco Bay Partnership for Workplace Education.* 1996

- Description: Communication skills curriculum on team building; includes activities.

Writing Curriculum. Bartlett Hewey. *Casco Bay Partnership for Workplace Education.* 1996

- Description: Curriculum focused on writing process including drafting. revision. editing and publishing.

Writing Our Stories. Celebrating Authorship with Writers at Work. Linda J. Evans. *University of Southern Maine.* 1996

- Description: Curriculum based on work with the casco bay partnership that documents the impact of publishing ones writing.

PROJECT DOCUMENTS

Casco Bay Partnership for Workplace Education Brochure.

- Description: Project brochure highlighting CBP program characteristics. with sampling of course offerings.

Casco Bay Partnership News. Project newsletter.

- Description: Editions of the CBP newsletters with a mixture of articles on workplace education. CBP initiatives. and site news - with contributions from workers. managers. and workplace educators.

Communication Framework. CBP Communication strand members. 1996

- Description: Framework that outlines assumptions that CBP holds regarding the teaching of communication; includes theories of communication competencies and best practices.

ESOL Framework. CBP ESL strand members. 1996

- Description: Guide that summarizes the principles of adult language acquisition for ESOL learners; includes classroom implications and techniques for implementation.

Literacy Framework. CBP Literacy strand members. 1996

- Description: Guide that outlines the assumptions about language learning. and how these assumptions inform teaching practices in the workplace classroom; includes instructional guidelines and best practices.

Math Guide. The Casco Bay Partnership Math Group. 1996

- Description: Basic guide of CBP math offerings with sample lessons and activities. assessment tools and techniques.

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Portfolio: A Tool for Self-directed Learning at Work, presented at *Self-directed Learning: Past and Future*, Montreal Symposium, Nona Lyons and Linda Evans, September, 1997

- Description: Using a case study approach, this paper describes how portfolios are used as a tool for self-directed learning in the workplace classroom; summarizes start-up process, barriers, faculty learnings and implications.

Portfolio Possibilities: An Introduction to the Casco Bay Portfolio Project for the Workplace, Nona Lyons and CBP Faculty, June1996

- Description: Pamphlet highlighting the purposes and work of the Casco Bay Partnership's Portfolio project, which includes fostering reflective practices and authoring one's learning.

The Voices of Learners At Work: Final Evaluation Report, Miriam Clasby, Clasby Associates, October 1997

- Description: Final evaluation for the NWLP, this document highlights innovative practices and outcomes. The evaluator looks at how CBP organizes workplace instruction, and what occurs inside the classroom, in the workplace and beyond. In documenting evidence, the evaluator interviewed company managers as well as ceos, and used evaluation feedback from participants and advisory committee members.

Writers At Work, Linda Evans, Editor.

- Description: Publication featuring employee writings which convey the richness and determination of their life stories to a wide audience; (5) editions available.

Writing Sample Scoring Rubric for Learners of English, Joan Zavez, *Casco Bay Partnership for Workplace Education*, 1995

- Description: A diagnostic tool used to assess both holistic and process skills of student writing; used for pre and post assessment in ESOL classes.

Copies of these Casco Bay Partnership documents were forwarded to the National Workplace Literacy Program in January, 1997.

Project Database:

In order to streamline record-keeping, Partnership staff enlisted the assistance of a volunteer software developer to create a customized database for the project. The Paradox-generated database was designed to maintain project records for participants, enrollments, completions, courses and strands across companies, and outcome data. As a tool, the database assisted project staff in maintaining an efficient system for compiling and analyzing multiple pieces of information. Templates within the database matched project-developed paper forms that students and teachers completed. Each site coordinator was responsible for entering data for his/her

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designated worksite during the course of an instructional cycle.

The utility of the project's own custom database was clearly evidenced in contrast to the NWLIS system imposed on the National Workplace Literacy projects during 1994-1996. In comparison, the CBP database was higher-end technology (WIN 95), easier to use, faster and less cumbersome, and was capable of producing tables, reports and graphics of various types. Project staff used these reports to compile informative reports for each worksite, as well as across the Partnership. Examples of database tables and graphs are included in the final evaluation report as well as this document. **It is a recommendation of this project that a well-designed and project-relevant database be included as a mainstay of program operations, for efficiency and accuracy of record-keeping.**

Dissemination Activities:

Project publications ("Writers At Work" and the Casco Bay Partnership newsletter) were routinely mailed to 500 businesses, community/educational agencies and NWLP projects. An additional 500 copies of each issue of "Writers At Work" were distributed to students in the program, university departments, and other interested parties. Partnership staff also supplied curriculum modules and other reports to individuals requesting them.

Much of the Partnership dissemination activity took place in workshops and conference presentations. Partnership staff presented locally, regionally and nationally on workplace education topics and the experience of the Casco Bay Partnership. The following selection of events took place in 1996 and 1997:

USM Summer Institute
Maine Businesses for Social Responsibility
Portland Training Resource Center
Central Maine Technical College
Northern New England TESOL
Portland Chamber of Commerce
Milwaukee, WI Workplace Learning Conference

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Los Angeles, CA. National Alliance of Business Conference

Cambridge, MA. National Portfolio Conference

Montreal, Canada. Symposium on Self-directed Learning: Past and Future

Evaluation:

As part of the National Workplace Literacy Program, the Casco Bay Partnership contracted with an external evaluator, Dr. Miriam Clasby, to review project accomplishments and prepare summary reports for the funding agency. In her work for and with the Casco Bay Partnership, Dr. Clasby designed evaluation protocols, met regularly with Partnership staff, visited sites, interviewed business partners, reviewed project materials, and generally advised and consulted on evaluation methods which were appropriate to the workplace education Partnership. The final evaluation document, submitted with this report, is titled "The Voices of Learners at Work."

In addition to her role as external evaluator, Dr. Clasby made an immense contribution to the project by helping the core staff build a theoretical framework for evaluation of Partnership operations. From the learning in the classroom, to the professional competencies of staff, to the organizational systems in business environments, Dr. Clasby designed straightforward assessment tools which could capture important information about the many layers of activity and development that occurred throughout the project. Workplace education is an arena of adult education that remains in the exploratory stages; effective evaluation tools that are integrated into routine project activities (rather than superimposed 'externally') offer great promise. It is a recommendation of this project that an evaluation specialist be considered an essential and core member of the project team, from design through operations.

PART THREE — SUMMARY

- The project produced two publications, 17 curriculum units and 9 related documents, and presented at numerous local, regional and national conferences;

Findings:

- The project used a customized database to track statistical information. It is a recommendation of this project that such a database be included as a mainstay of program operations, for efficiency and accuracy of record-keeping.

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- The project retained an external evaluator to review and report on program activities. It is a recommendation of this project that an evaluation specialist be considered an essential and core member of the project team, from design through operations.

Part Four: Future of the Casco Bay Partnership

As stated in the grant proposal, it was a goal of the Casco Bay Partnership to move from the federally funded demonstration project to an ongoing, self-sustaining Partnership entity. At the time of this writing, the Casco Bay Partnership has made significant gains in that direction.

NWLP grant-funded activities at the Partnership sites were phased down in the last quarter of 1997. Two of the seven businesses (Hannaford Bros. Co. and Konica Quality Photo) made the decision not to continue with workplace education programs at their sites. The remaining five Partnership companies (American Tool Company, Barber Foods, National/Fairchild Semiconductor, Nichols Portland, Wood Structures) opted to continue their successful in-house programs. With the assistance of Partnership staff, company personnel submitted applications to the State of Maine for training reimbursement funds under the Governor's Training Initiative. All of the applications were reviewed and accepted, with the provision that a significant percentage of the costs for the basic skills programs be paid by the employer directly (30-40%). As a result, each of the Partnership companies maintains the workplace education program in much the same form as the workplace literacy grant --with a Partnership site coordinator, advisory group, and on-site classes that include incentives to employee participants.

Departure from the NWLP framework has also resulted in broadening the scope of workplace education services. Partnership staff have amplified the basic skills emphasis of the workplace education programs to include more computer-based training and software applications, higher level math and blueprint reading courses, and communication/leadership courses to supervisors and managers.

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The University of Southern Maine continues to house the Casco Bay Partnership in the College of Education, and provides the office overhead as well as the contributions of College faculty to support program operations. The Casco Bay Partnership has become recognized as a university-based resource for workforce development and workplace education. Additional employers in the area have requested and received workplace education services, and Partnership staff anticipate another round of applications to the State for training reimbursement funds.

While it is not clear how the workplace education Partnership will sustain itself over the long-term, the successes of the NWLP project established an important and valuable community resource. Workplace education is better understood as a vital component of successful organizational development. The contributions of the university-based workplace education program have had a positive impact on the business and education community of southern Maine.

PART FOUR — SUMMARY

- The Casco Bay Partnership has made significant gains to institutionalize the program.
- Five of the seven Partnership sites are continuing workplace education programs, with assistance from a state training fund. Additional companies have requested and received services.
- The contributions of the university-based workplace education program have had a positive impact on the business and education community of southern Maine.